

REMARKS

Reconsideration of the action mailed September 23, 2003, is requested in light of the foregoing amendments and the following remarks.

The Examiner rejected claims 1-8 and 12-20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,975,697 ("Podoleanu").

The Examiner objected to claims 9 and 10 as being dependant upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant has amended claims 1-3, 6-10, 16-17, and 19-20 for clarification. Applicant has canceled claim 18. No new matter is added.

Section 103(a) rejections

Claim 1 was rejected as unpatentable over Podoleanu. Applicant respectfully submits that Podoleanu, either alone or in combination, fails to disclose or suggest elements of claim 1. Claim 1 recites "a phase delay generating means partially interposed between said first and said second collimating lens such that only a portion of said collimated beams pass through said phase delay generating means, said phase delay generating means operable to delay a phase of at least one wavelength of an optical signal present in said input optical signal such that when the said collimated beams are focused by the said second collimating lens, the at least one wavelength is suppressed while other wavelengths are transmitted through the output optical fiber." Podoleanu does not disclose or suggest a phase delay generating means such that only a portion of the collimated beams pass through the phase delay generating means and that results in the suppression of at least one wavelength when focused while allowing the transmission of other wavelengths.

In Podoleanu, an interferometer is disclosed for mapping the interior of an eye with a high depth resolution. Typically, an interferometer includes an object beam and a reference beam. The reference beam is manipulated to produce an interference pattern in order to measure small changes in path distance by the object beam and thus, in this case, measure surface

topology of an eye. The Examiner cites FIG. 17 as disclosing Applicant's phase delay generating means. The object in FIG. 17 is an OPD spread enlarger element (Item 112) that can be placed within either the object or reference path of the interferometer. The purpose of the spread enlarger is to disperse the optical signal and thus enlarge the correlation profile of the source. See lines 24-28 of column 17. The higher the dispersion, the more the coherence length can be enlarged, resulting in greater depth resolution. See lines 45-51 of column 17.

The optical devices disclosed as OPD spread enlarger elements, such as shown in FIGS. 16 and 17 do not function as the Applicant's phase delay generating means. For example, FIG. 17 includes nine parallel glass plates which disperse the incoming optical beam into nine separate beams. At least one of the plates is completely interposed between the lenses (nine plates forming nine paths). See line 64 of column 17 to line 6 of column 18. Applicant's recited phase delay generating means is only partially interposed between the two collimating lenses, thus only causing a phase delay in part of the optical path.

Further, the resulting dispersed optical path of Podoleanu does not suppress any wavelengths. In fact, Podoleanu teaches away from wavelength suppression. Podoleanu teaches that the greater the number of plates, providing a greater number of optical paths, the better the results. The purpose for the multiple delayed copies, formed from the increased number of optical paths, is to enlarge the correlation profile, thus it is desirable to include as many input waveforms as possible. See lines 13-30 of column 18. Consequently, the suppression of a wavelength or wavelengths would reduce the correlation profile and provide a less desirable result. Additionally, the interferometer functionality would be decreased by wavelength suppression. Since the spread enlarger is located in either one of the object or reference path of the interferometer, the suppression of a wavelength would reduce the effectiveness of the interferometer ability to compare reference and object optical beams in order to measure distance. Conversely, Applicant's recited phase delay generating means results in the suppression of at least one wavelength through destructive interference.

The Examiner further cites line 56 of column 12 to line 3 of column 13 as disclosing the Applicant's wavelength suppression. The cited section refers to U.S. Patent 5,459,570 used by

Podoleanu to distinguish the Podoleanu invention. Podoleanu emphasizes "the present disclosure where the sources have substantially the same wavelengths." See lines 60-61 of column 12. The use of the same source wavelengths again teaches away from the Applicant's recited suppression since with suppression Podoleanu would not have any signal to enhance the desired correlation profile. The demodulation method and band pass filters that are also disclosed in the cited section are described to further distinguish Podoleanu from U.S. Patent 5,459,570 and deal with the demodulation and filtering of an electrical input signal in order to separate the signal into two separate images on a display device such as a computer screen. See lines 38-54 of column 14. The demodulation and band pass filter apparatuses are always operating on electrical signals produced by photodetectors. See, for example, FIG. 9 wherein items 402 and 403 are photodetectors converting the optical input of each path into electrical signals, items 101 and 102 are electrical band pass filters, and items 406 and 428 are demodulators feeding the input into display device 19. There is no suppression of particular optical wavelengths involved in the demodulation and imaging process, only separation and analysis of electrical inputs for display.

Finally, the Examiner cites, in the interview summary, lines 57-67 of column 7 as disclosing suppression of at least one wavelength as in Applicant's recited element of claims 1 and 16. The cited section of the summary describes signal analysis for a system including multiple interferometers providing input to a single analyzer. However, the analysis is done by a "single photoreceiver for all of the interferometers." See lines 59-61 of column 7. The recited section thus relates to the analysis and separation of electrical signals so that different images from different interferometers can be presented. See lines 1-4 of column 8. Optical wavelengths are not discussed and no signal suppression is disclosed in the cited section.

Consequently, Podoleanu does not disclose or suggest the recited element of claim 1. Since Podoleanu does not disclose or suggest the recited elements of claim 1, Podoleanu does not disclose or suggest claim 1. For at least the foregoing reasons, Applicant respectfully submits that claim 1 is in condition for allowance.

The Examiner has rejected claims 2-8 and 12-15, which depend from claim 1, as unpatentable over Podoleanu. For at least the reasons discussed above with respect to claim 1, Applicant respectfully submits that claims 2-8 and 12-15 are in condition for allowance.


The Examiner has rejected independent claim 16 as unpatentable over Podoleanu. Claim 16 recites "phase delaying a portion of the collimated beams, the collimated beams divided into a delayed portion and a non-delayed portion; and focusing both the delayed portion and the non-delayed portion of the collimated beams such that at least one wavelength is suppressed while other wavelengths are transmitted." Podoleanu does not disclose dividing collimated beams into a delayed portion and a non-delayed portion. Podoleanu also does not disclose suppressing at least one wavelength. For at least these reasons and the reasons discussed above with respect to claim 1, Applicant respectfully submits that claim 16 is in condition for allowance.

The Examiner has rejected claims 17 and 19-20, which depend from claim 16, as unpatentable over Podoleanu. For at least the reasons discussed above with respect to claims 1 and 16, Applicant respectfully submits that claims 17 and 19-20 are in condition for allowance.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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